



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant : Shinichi Tanaka
Title : Gas Generator
Filed : March 7, 2002
Serial No. : 10/091,533
Group Art Unit : 3616
Examiner : Deanna L. Draper

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Attn: BOARD OF PATENT APPEALS AND INTERFERENCES

APPELLANT'S BRIEF (37 C.F.R. § 1.192)

This brief is in furtherance of the Notice of Appeal, filed in this case on April 5, 2004.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Takata Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There is a total of 2 claims in the application, which are identified as claims.

B. Status of all the claims

1. Claims cancelled:
2. Claims withdrawn from consideration but not cancelled:
3. Claims pending: claims 2
4. Claims allowed:
5. Claims rejected: claims 2

C. Claims on Appeal

Claims on appeal are claims 1 and 2.

IV. STATUS OF AMENDMENTS

Appellant submitted an Amendment After Final on March 16, 2004 amending claim 1 and canceling claims 3-7. In the Examiner's Advisory Action mailed March 30, 2004, the Examiner stated that the submitted amendments would not overcome the 35 U.S.C. 103(a) rejection and that for purposes of Appeal the proposed amendments would be entered.

There are no other outstanding amendments.

V. SUMMARY OF INVENTION

The present invention relates to a gas generator for an airbag device. In a conventional gas generator, as shown in Fig. 9 of the application, a cylindrical partition 29 is located in a center of upper and lower housings 27, 28, and a squib 34 is located in the cylindrical partition 29 and held therein by bending a lower end of the cylindrical partition 29. In the conventional gas generator, the squib can not be positioned easily in the cylindrical partition 29. In view of the problems, the present invention has been made.

The gas generator of the invention comprising a container having an outer shell (Specification at page 5, paragraph 16), a gas initiator disposed in the container (Specification at page 7, paragraphs 24, 25), a squib disposed adjacent to the gas initiator for igniting the gas initiator and having a squib holder with a shoulder (Specification at page 7, paragraphs 23-25), and a partition disposed in the outer shell for dividing the container into a plurality of gas initiator chambers (Specification at page 5, paragraph 16).

The partition includes projections projecting from an inner peripheral surface of the partition (Specification at page 6, paragraph 21), dents at sides opposite to the projections (Specification at page 6, paragraph 21), and a collar for holding the squib holder between the projections and the collar (Specification at page 7, paragraph 23). The shoulder of the squib holder is formed at an upper peripheral edge of the squib holder contacting the partition (Specification at page 7, paragraph 23). Thus, when the squib holder is inserted into the partition, the shoulder of the squib holder abuts against the projections to position the squib inside the partition (Specification at page 7, paragraph 23 and page 10, paragraph 33).

The projections are easily formed on the interior of the partition by punching and the like from the outside of the partition while forming dents on the outer surface of the partition (Specification at page 6, paragraph 21). The entire squib holder is held between the projections and the collar, and contacts the partition, so that the squib can be easily and surely retained inside the partition (Specification at page 4, paragraph 13).

Advantageously, the present invention enables the projections, i.e., the positioning member, to be easily formed by an operation such as pressing, resulting in cost reduction (Specification at page 4, paragraph 13). Further advantageously, the "projections are preferable because the formation thereof is significantly easier than the formation of the stepped surface 59A." (Specification at page 10, paragraph 33)

These advantages are achieved by the present invention as recited in the apparatus of independent claim 1 which provides: "A gas generator comprising: a container having an outer shell;

a gas initiator disposed in the container; a squib disposed adjacent to the gas initiator for igniting the gas initiator and having a squib holder with a shoulder; and a partition disposed in the outer shell for dividing the container into a plurality of gas initiator chambers and having projections projecting from an inner peripheral surface of the partition, dents at sides opposite to the projections, and a collar for holding the squib holder between the projections and the collar, said shoulder being formed at an upper peripheral edge of the squib holder contacting the partition so that when the squib holder is inserted into the partition, the shoulder of the squib holder abuts against the projections to position the squib inside the partition."

VI. ISSUE

The issue is whether the Examiner was correct in rejecting claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over Zeuner et al. (U.S. Patent 5,501,152, hereinafter Zeuner).

VII. GROUPING OF CLAIMS

For purposes of this Appeal Brief only, the claims have been grouped as follows:

Group I. claims 1 and 2.

For the purposes of this Brief only, claims 1 and 2 are not argued separately and may stand or fall together. The rejected claims otherwise should not stand or fall together. The reasons why the claims are separately patentable are set forth in the Argument section of this Brief.

VIII. ARGUMENTS

Was the Examiner correct in rejecting claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over Zeuner et al. (U.S. Patent 5,501,152, hereinafter Zeuner)?

In Zeuner, a gas generator includes a housing 2, a central tube 1 situated in a center of the housing 2, and an igniter 5 situated in the tube 1. In the Examiner's opinion, a shoulder is formed in a squib holder, and a positioning member (stepped portion) and a collar are formed in the central tube 1.

Contrary to the Examiner's assertion, Zeuner discloses that the squib holder includes an annular projection projecting outwardly from a middle of an outer periphery of the squib holder, and the tube 1 includes a stepped portion for receiving the annular projection. The collar of the tube 1 is formed to hold the annular projection positioned in the stepped portion.

The Examiner asserts that Zeuner discloses an air bag gas generator as claimed in claim 1. However, the Examiner admits that Zeuner fails to disclose projections projecting from an inner peripheral surface of the partitions so that when the squib holder is inserted into the partition, the shoulder of the squib holder abuts against the projections to position the squib as claimed in claim 1. The Examiner points out that Zeuner includes projections projecting from a peripheral surface of the squib holder and abutting with a shoulder on the partition member. The Examiner asserts that it would have been obvious to a person of ordinary skill in the art at the time of the present invention to switch the projections from the squib holder to the partition member because it would be a mere reversal of essential working parts of

the device involving only routine skill in the art.

The Examiner is incorrect as reversal of essential working parts of Zeuner would not result in the present claimed invention. Reversal of the working parts of Zeuner would result in the squib holder including a stepped portion for receiving a projection from the inner periphery of tube 1. An upper portion of the squib holder (the portion above the stepped portion) sliding into place in the revised tube would be pinched toward the center axis of the squib holder in order to slide past the tube 1 projection.

Additionally, in an embodiment according to the present invention, dents are formed at the sides of the partition opposite to the projections. That is, the dents are formed on the outer surface of the partition opposite the projections projecting from the inner peripheral surface of the partition. Still more, the projections of the inner surface result from the formation of the dents in the outer surface. In Zeuner, no dents are formed at the outer surface of tube 1. There are no dents or projections at the outer surface of tube 1 corresponding to the stepped portion of tube 1 and as described above, reversal of the working parts of Zeuner would not result in the claimed invention.

Further, the Examiner asserts that it would have been obvious to a person of ordinary skill in the art at the time of the present invention to form the squib holder shoulder at an upper peripheral edge contacting the partition, because it would require a rearrangement of parts of an invention involving only routine skill in the art.

The Examiner is incorrect as rearrangement of the parts of Zeuner would not result in the present claimed invention. In the embodiment according to the present invention, the partition includes projections projecting from an inner peripheral surface

of the partition to contact the shoulder of the squib holder. In Zeuner, the tube 1 includes a stepped portion, but there are no projections projecting from the inner peripheral surface of tube 1 to abut the shoulder of the squib holder and position the squib inside the partition. Zeuner fails to include parts sufficient such that rearrangement thereof would recreate, based on only routine skill in the art, the present claimed invention.

Additionally, the squib holder of the embodiment according to the present invention is held between the projections and the collar in order that the squib is easily positioned (Instant specification at page 4, paragraph 13) with high accuracy (Instant specification at page 10, paragraph 34). In Zeuner, although the collar holds the squib holder, the annular projection located in the stepped portion is pinched by the collar on insertion.

Further still, the shoulder is formed at the upper peripheral edge of the squib holder contacting the partition so that when the squib holder is inserted into the partition, the shoulder of the squib holder abuts against the projections to position the squib inside the partition. In contrast in Zeuner, the shoulder is formed at the squib holder; however, the shoulder does not abut against any projections of the tube 1. Specifically, the shoulder is not used to position the squib holder in Zeuner; rather, the annular projection positions the squib holder in the stepped portion of tube 1 contrary to the claim 1 requirement.

Finally, and with respect to the Examiner's above-noted assertions, the Examiner has failed to identify a suggestion or motivation in the reference suggesting or describing the asserted modification. The Examiner appears to have improperly applied hindsight reasoning based on the present invention to make the asserted modification. "The mere fact that a worker in the art

could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." Ex parte Chicago Rawhide Mfg. Co., 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984). The Examiner has failed to identify any motivation or reason for a worker in the art to make the necessary changes in the Zeuner device. The Examiner is in error for any of the above reasons and has not made out a prima facie case of obviousness, and the rejection of claim 1 should be reversed.

Claim 2 depends from claim 1, includes further important limitations, and is patentable over the applied combination of references for at least the reasons advance above with respect to claim 1. The rejection of claim 2 should be reversed.


Conclusion

For the extensive reasons shown above, Appellant respectfully requests the rejection be reversed.

Each of the Examiner's rejections has been traversed. Appellant respectfully submits that all claims on appeal are considered patentable over the applied art of record. Accordingly, reversal of the Examiner's Final Rejection is believed appropriate and courteously solicited.

If for any reason this Appeal Brief is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned, Applicant's agent of record.

Respectfully submitted,
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IX. APPENDIX OF CLAIMS INVOLVED IN THE APPEAL

1. A gas generator comprising:
a container having an outer shell;
a gas initiator disposed in the container;
a squib disposed adjacent to the gas initiator for igniting the gas initiator and having a squib holder with a shoulder; and
a partition disposed in the outer shell for dividing the container into a plurality of gas initiator chambers and having projections projecting from an inner peripheral surface of the partition, dents at sides opposite to the projections, and a collar for holding the squib holder between the projections and the collar, said shoulder being formed at an upper peripheral edge of the squib holder contacting the partition so that when the squib holder is inserted into the partition, the shoulder of the squib holder abuts against the projections to position the squib inside the partition.

2. A gas generator according to claim 1, wherein said partition is cylindrical.